

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-9. (Cancelled)

10. (Previously Presented) A platinum group metal free catalyst composition for entrapping SO_x, the catalyst composition comprising an oxide selected from the group consisting of zirconia-praseodymia, mixed manganese-yttria and mixtures thereof.

11. (Previously Presented) The catalyst composition of claim 10 further comprising praseodymia.

12. (Original) The catalyst composition of claim 10 comprising zirconia-praseodymia.

13. (Original) The catalyst composition of claim 10 comprising mixed manganese-yttria.

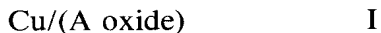
14. (Previously Presented) A method of adsorbing SO_x as metal sulfate in a temperature range of 200°C to 500°C under lean fuel conditions, the method comprising contacting an exhaust with the catalyst composition of claim 10.

15. (Previously Presented) A method of desorbing metal sulfates at a temperature range of 250°C to 450°C under rich fuel conditions, the method comprising contacting an exhaust with the catalyst composition of claim 10.

16. (Previously Presented) A vehicle exhaust system comprising:
a nitrogen oxide trap; and

a SO_x adsorbing component located upstream of the nitrogen trap in the vehicle exhaust system, the SO_x adsorbing material comprising a catalyst selected from the group consisting of:

a) a platinum group metal-free (PGM-free) regenerable catalyst composition for entrapping SO_x comprising a component having formula I;



wherein A oxide is selected from the group consisting of SiO₂, Zr-SiO₂, Al₂O₃, TiO₂-Al₂O₃, ZrO₂, In₂O₃, and mixtures thereof, wherein the platinum group metal-free regenerable catalyst has a Cu loading from about 10 mol % to about 60 mol %; or

b) a platinum group metal free regenerable catalyst composition for entrapping SO_x comprising an oxide selected from the group consisting of praseodymia, zirconia-praseodymia and mixed manganese-yttria and mixtures thereof.

17. (Currently Amended) The vehicle exhaust system of claim 16 wherein the SO_x adsorbing material comprises a platinum group metal-free (PGM-free) regenerable catalyst composition for entrapping SO_x comprising a component having formula I;



wherein A oxide is selected from the group consisting of SiO₂, Zr-SiO₂, Al₂O₃, TiO₂-Al₂O₃, ZrO₂, In₂O₃, and mixtures thereof[;] .

18. (Original) The vehicle exhaust system of claim 17 wherein the A oxide is selected from the group consisting of SiO₂, Zr-SiO₂, TiO₂-Al₂O₃, ZrO₂, In₂O₃, and mixtures thereof.

19. (Original) The vehicle exhaust system of claim 17 wherein the A oxide is selected from the group consisting of SiO₂, Zr-SiO₂, and mixtures thereof.

20. (Original) The vehicle exhaust system of claim 16 wherein the SO_x adsorbing material comprises an oxide selected from the group consisting of praseodymia, zirconia-praseodymia and mixed manganese-yttria, and mixtures thereof;

21. (Original) The vehicle exhaust system of claim 16 wherein the SO_x adsorbing component is a diesel oxidation catalyst.

22. (Original) The vehicle exhaust system of claim 16 wherein the SO_x adsorbing component is a catalyzed soot filter.